



ASSOCIATION OF CONSULTING CIVIL ENGINEERS(INDIA)
KAKINADA CENTRE

WEBINAR ON

IMPORTANCE OF GEOTECHNICAL INVESTIGATION IN CIVIL ENGINEERING CONSTRUCTIONS
AND EARTH QUAKE EFFECTS



Speaker: **Dr. H N RAMESH**

Principal & Director . The Oxford College Of Engineering. Bangalore
Formerly Principal & Director UVCE university, Dean of Engineering Bangalore university
PMEB Director & Acting Vice Chancellor Bangalore university

On Sunday, 29th December, 2024, 11.00am

Please Join Through the WebEx Link

<https://acceindia.webex.com/acceindia.j.php?MTID=m1c13f15c3eac6bdaS16d158357ee5S40>

Meeting number: 2517 532 1011 Password: 12345

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PRAGATI ENGINEERING COLLEGE (Autonomous)

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(Approved by AICTE & Permanently Affiliated to JNTUK, Kakinada & Accredited by NAAC with 'A' Grade)
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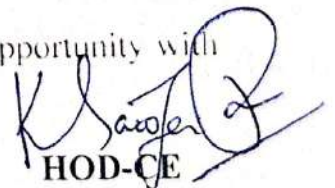
Date: 20-12-2024

CIRCULAR

This is to inform that Department of CIVIL ENGINEERING In Association with Association of Consulting Civil Engineers (India), Kakinada centre cordially organizing an Webinar on “**IMPORTANCE OF GEOTECHNICAL INVESTIGATIONS IN CIVIL ENGINEERING CONSTRUCTIONS AND EARTH QUAKE EFFECTS**” by “**Dr. H.N RAMESH Principal & Director, The Oxford College Of Engineering, Bangalore**” on Sunday 29th December 2024.

Link: <https://acceindia.webex.com/acceindia/j.php?MTID=mddbadd0f3ef9455dd03bfe3e1566c9db>

All the students and faculty members are requested to utilize this opportunity with your presence.


HOD-CE

Copy to....

Dept. Notice Board

Circulate among Faculty.

Class Rooms of II, III & IV years





PRAGATI ENGINEERING COLLEGE

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#1-378, ADB Road, Surampalem – 533 437, Near Peddapuram, E.G. Dist., A.P.
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DEPARTMENT OF CIVIL ENGINEERING

Report

IMPORTANCE OF GEOTECHNICAL INVESTIGATIONS IN CIVIL ENGINEERING CONSTRUCTIONS AND EARTH QUAKE EFFECTS

– Dr. H.N RAMESH Principal & Director, The Oxford College Of Engineering, Bangalore

Date: 30th DEC, 2024

Department of CIVIL ENGINEERING and Association of Consulting Civil Engineers (India), PRAGATI Engineering College, SURAMPALAM organized a WEBINAR on “IMPORTANCE OF GEOTECHNICAL INVESTIGATIONS IN CIVIL ENGINEERING CONSTRUCTIONS AND EARTH QUAKE EFFECTS” by “Dr. H.N RAMESH Principal & Director, The Oxford College Of Engineering, Bangalore” on 30th December 2024, 11:00 Am (IST) Onwards. He explained various concepts about IMPORTANCE OF GEOTECHNICAL INVESTIGATIONS AND GROUND BEHAVIOUR CONSIDERATIONS IN INFRASTRUCTURE PROJECTS. He explained about importance of geotechnical investigations and ground behavior considerations in infrastructure projects. He also explained some key reasons why geotechnical investigations are important:

1. **Foundation Design and Stability:** The strength, type, and behavior of soil at a construction site determine the type of foundation required. Geotechnical investigations help in selecting the right foundation type, whether shallow or deep, ensuring that the structure remains stable under load without risk of settlement or failure.
2. **Soil Behavior Analysis:** Different soils behave differently under stress and load. Geotechnical investigations analyze the shear strength, compressibility, and other characteristics of soil, which are critical in understanding how it will react to the loads imposed by the structure.
3. **Identifying Soil Liquefaction Potential:** Certain soil types, especially saturated sandy soils, are susceptible to liquefaction during an earthquake. Geotechnical investigations help identify areas where liquefaction could occur and inform necessary engineering precautions.



4. **Avoiding Groundwater Problems:** Groundwater levels and flow patterns can influence the design of foundations, drainage systems, and excavation procedures. Geotechnical investigations assess groundwater conditions to prevent problems like flooding or excessive seepage that may affect the structure's integrity.
5. **Preventing Settlement and Cracking:** Improperly designed foundations based on inaccurate soil data can lead to differential settlement, causing cracks or structural failure. Geotechnical investigations provide the data needed to design foundations that minimize settlement risks.
6. **Environmental Impact Assessment:** Geotechnical investigations help assess the potential for soil contamination, erosion, and other environmental concerns that may affect the construction process or long-term structure durability.
7. **Cost and Risk Reduction:** Understanding the site conditions early in the planning phase helps in avoiding costly mistakes during construction and prevents delays caused by unforeseen subsurface conditions. Early identification of challenges enables more accurate budgeting and risk management.

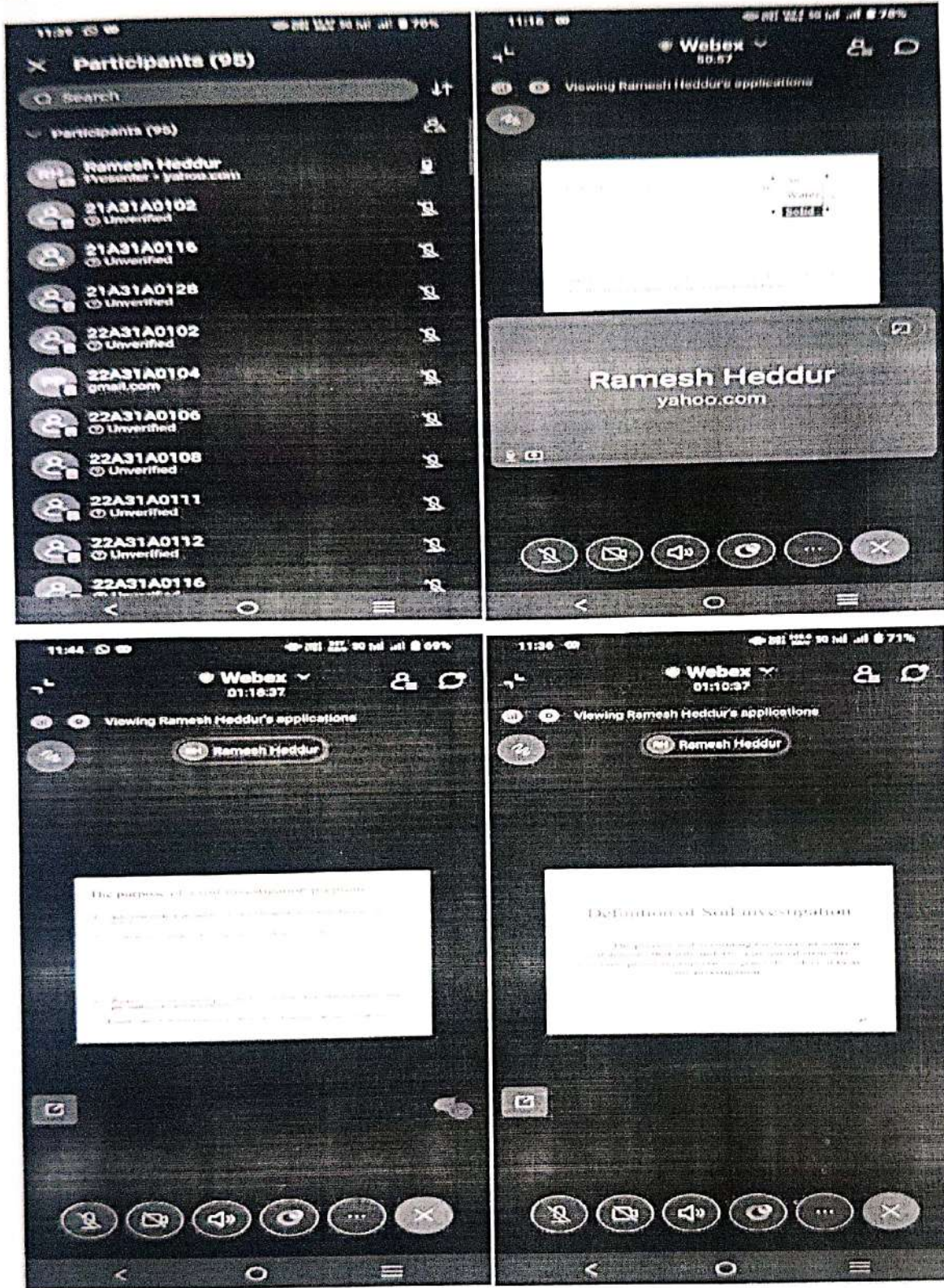
Earthquake Effects on Civil Engineering Structures

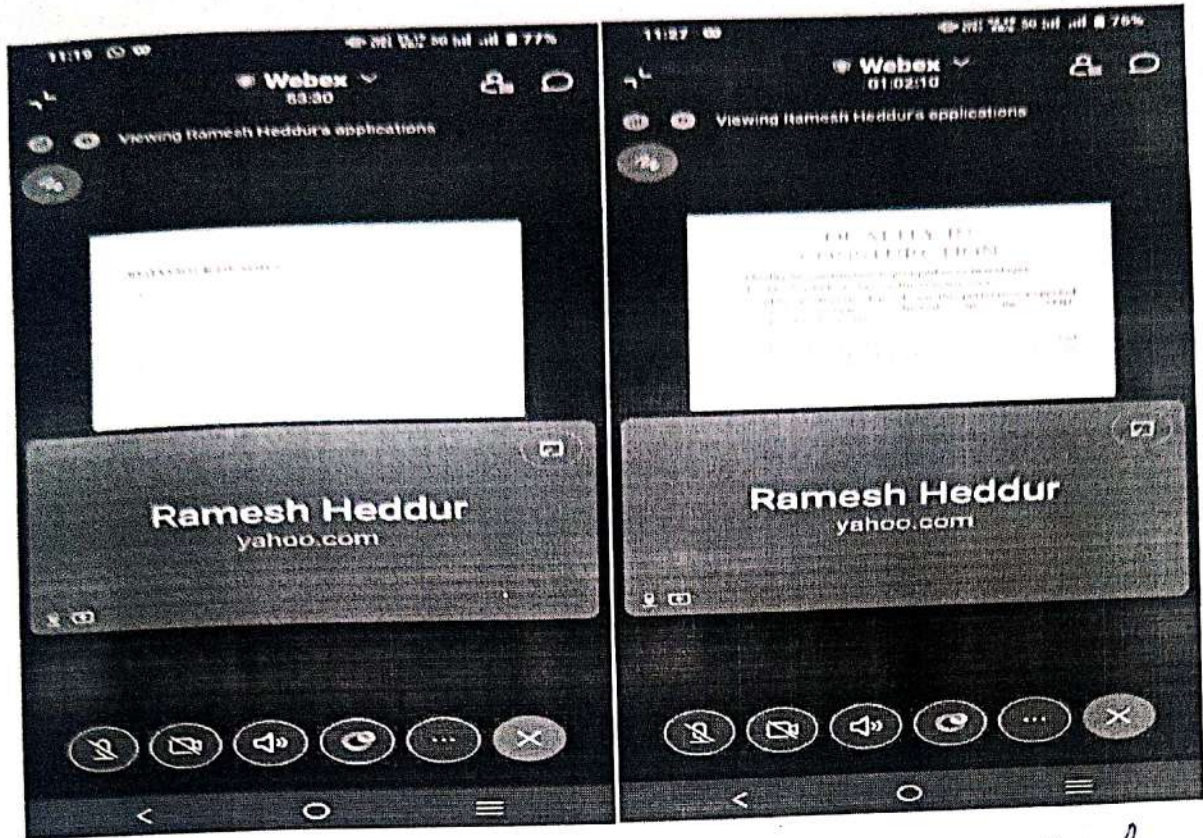
Earthquakes can have significant impacts on civil engineering structures, especially if they are not designed to withstand seismic forces. The effects of earthquakes on constructions include:

1. **Ground Shaking:** The most immediate impact of an earthquake is the ground shaking, which can cause damage to buildings, bridges, roads, and other infrastructure. The intensity of shaking depends on the earthquake's magnitude, distance from the epicenter, and local soil conditions.
2. **Liquefaction:** As mentioned, soil liquefaction occurs when saturated soils temporarily lose their strength and behave like a liquid due to the shaking of an earthquake. This can lead to foundation failure, tilting, or even complete collapse of structures.
3. **Landslides:** Earthquakes can trigger landslides, especially in hilly or mountainous regions. These landslides can damage roads, buildings, and other infrastructure located on or near slopes.
4. **Piping and Erosion:** Earthquakes can cause the migration of water through soil, a phenomenon known as piping, leading to erosion and weakening of foundations or embankments. This can result in significant damage to structures, especially those built near water bodies.
5. **Building Collapse:** If buildings are not designed to resist seismic forces, the shaking from an earthquake can cause them to collapse. Inadequate structural reinforcement, improper foundation design, and the absence of seismic-resistant materials can lead to catastrophic failure during an earthquake.
6. **Foundation Settlement:** Earthquakes can cause uneven settlement in the foundation, particularly in loose or soft soils. This can result in structural damage like cracks, misalignment, and tilting.

Total number of 95 members attended the session out of which 45 Pragati students had participated the session.

Some of the glimpses of webinar are shown below.





K. Sanga R
HOD-CE



DEPARTMENT OF CIVIL ENGINEERING
ACCE (I) STUDENT CHAPTER
LIST OF STUDENTS ATTENDED

Event: "IMPORTANCE OF GEOTECHNICAL INVESTIGATIONS IN CIVIL ENGINEERING CONSTRUCTIONS AND EARTH QUAKE EFFECTS"

Date: 30-12-2024

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